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ABSTRACT

A study determined if there would be any significant difference in comprehension test scores when learning disabled students were instructed with and without graphic organizers while reading novels. Subjects were five male fifth-grade learning disabled students reading on the fourth-grade level, who came from the same middle-class suburban school and background. Students read two teacher-selected novels--the first novel was read without the use of graphic organizers, and the second novel was taught using graphic organizers. Subjects were asked a set of teacher generated comprehension questions. Results indicated that the use of graphic organizers increased comprehension when used with learning disabled students. (Contains 17 references and 1 table of data. Sample tests and sample graphic organizers are attached.) (RS)

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The Effect of Using Graphic Organizers with Learning Disabled Students to Increase Comprehension

By

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Abstract

This study was undertaken to determine if there would be any significant difference in comprehension test scores when learning disabled students were instructed with and without graphic organizers while reading novels. It was hypothesized that the use of graphic organizers would increase comprehension when used with learning disabled students.

Test results support the hypothesis that the use of graphic organizers increase comprehension when used with learning disabled students.

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Methods to improve the comprehension skills of learning disabled students have been identified by many as an important area of research (Das, Mulcahy, and Wall, 1982). Comprehension occurs when students can activate their prior knowledge and associate it with new knowledge gained from reading. The linking of old and new knowledge is enhanced when all language processes (reading , writing , listening, speaking) are integrated.

Graphic organizers are visual representations of concepts that help students learn, remember, and organize important information that they read or have read. Many things have been used as graphic organizers, structured overviews, tree diagrams, semantic maps, semantic networks, episodic maps, concept maps, thematic illustrations, and story maps are a few of the most familiar.

The use of graphic organizers to increase comprehension and learning has been the subject of numerous research investigations. The results of these studies differ on what kinds of organizers are most effective. The efficiency of graphic organizers in improving comprehension has been the subject of research since Abuse first developed his advance organizers in the early 1960's (Dunston,1992).

Skillful readers seem to stop periodically to check their understanding, alert to what Anderson (1980) refers to as the "click" of comprehension or the "clunck" of a comprehension problem. Learning disabled readers do not monitor their comprehension as well as skilled readers do. One of the biggest problems in comprehension is making children aware that they do not understand something; they think they do understand (Maria,1990).

Even when learning disabled readers are aware of a comprehension problem they may not know how to fix it.

Research indicates that learning disabled students need a great deal of structure, organization and a clear format in order to comprehend what they have read. Graphic organizers accommodate the learning disabled learner's need for structure, organization, and clear format, as well as his /her need to relate information to personal experience. Learning strategies designed for the average reader can be adapted to the learning disabled reader.

A key problem for learning disabled students with reading comprehension difficulties is that they tend to be passive in their approach to reading and wait for teacher direction. The need to engage the reluctant reader with the written text is evident. Motivation is a factor that strongly effects reading achievement. Children must want to read in addition to having the ability, or they will not be successful (Bettelheim and Zelan, 1981).

The backgrounds of children with learning disabilities are often limited. Since comprehension is now understood as a process in which the student now actively integrates new information with prior knowledge. The teacher's role , then in his/her effort to improve reading comprehension must be to both increase the students background of experiences and information base through a variety of classroom activities , and to assist students in activating their previous knowledge of the topic at hand (Smith, 1979).

Although it is important to determine each child's reading style and to match instruction to it as closely as possible. Using a mult-sensory approach that

incorporate the four learning modalities; visual, auditory, kinesthetic, and tactile would benefit learning disabled readers(Vail,1992).

Reading comprehension provides the unifying thread for the integration of all instruction in all the language processes. This integration is particularly necessary for remedial readers for two reasons:

1. Remedial readers are likely to have difficulties with the other processes. Extensive reviews of research by Loban (1976), Stotsky (1983, and Tierney and Leys (1986) document the fact that although there are exceptions, most remedial readers also have difficulty with writing.
2. Because many of them have difficulty with the other language process as well as with reading, remedial readers have more difficulty than other students in integrating instruction presented in isolation (Maria, 1990).

Given the need to increase reading comprehension in learning disabled students and today's shift from the skill based reading to meaning based reading, research in the use of graphic organizers to increase comprehension is critically important.

Hypothesis

For the purposes of this study, it was hypothesized that the use of graphic organizers will increase comprehension when used with learning disabled children.

Procedures

The students participating in this study were five learning disabled students , placed in a resource center. The students were all fifth grade boys, reading at a fourth grade level. All of the sample of resource center students came from the same middle-class suburban school and background.

The students read two teacher selected novels, *Shiloh* by Phyllis Reynolds Naylor and *Stone Fox* by John Reynolds Gardiner. Every effort was made to provide novels of the same readability level, length, and level of interest to the student. However, it was difficult to control for differences in the student's interest level.

The first novel *Shiloh* was read without the use of graphic organizers. Graphic organizers were used when reading the second novel *Stone Fox*. At the end of each novel read the students were asked a set of teacher generated comprehension question, both literal and higher level questions were used. The questions were corrected by a non biased cooperating teacher. Every effort was taken to avoid showing favoritism toward one teaching strategy.

The student read both novels orally in a round robin fashion. The novels were read on a daily bases in a resource center taught by the author. When reading the novel *Shiloh* the discussion techniques were the same as those used when reading *Stone Fox.* The only different technique used in reading the novel *Stone Fox* was the addition of the graphic organizers. The different forms of graphic organizers that were used were: story frame, plot

relationship chart, story map, prediction chart, knowledge chart, story summary, story chart, character map and a Venn diagram.

Results

Table 1 summarizes the means, standard deviations and t between the samples.

Table 1

Means, Standard Deviations, and t Between Samples

	Mean	SD	t
Non Graphic Organizers (control)	81.00	3.81	2.66
Graphic Organizers (experimental)	88.20	4.71	

Sig. < .05

As can be seen the control group (non graphic organizers) produced scores of 81%. After the use of graphic organizers much higher scores were produced, 7.2 points higher. The mean scores indicate significant comprehension improvement with the use of graphic organizers. The t of the samples was significantly below the .05 level.

Conclusion

The results of this study support the hypothesis that the use of graphic organizers increase comprehension when used with learning disabled students.

The positive effect of using graphic organizers with learning disabled was sufficient enough to support the theory that: graphic organizers accommodate the learning disabled students need for structure, organization and a clear format, as well as his/her need to relate information to personal experience. Graphic organizers encourage higher order thinking which is a hard concept for learning disabled students to grasp.

Several factors support using graphic organizers in the classroom. First they are visual, second they can be used across the curriculum, third they are fairly easy for teachers to construct, and fourth students respond favorably to them. The students indicated they enjoyed making and completing the graphic organizers. The students worked very well with the teacher directed graphic organizers. They showed continuous improvement working on their own as they became more familiar with the graphic organizers.

The significant improvement made by the learning disabled students in this study using the graphic organizers is important enough to warrant future research on the use of graphic organizers with regular as well as learning disabled students in the classroom.

Graphic Organizers, Comprehension and Learning Disabled Students

Related Research

Visual Representation of concepts (graphic organizers) help students learn., remember, and organize important information that they have read. They also guide students to internalize important thinking skills (Cassidy, Hossler, 1992)

Teachers can use a whole class approach to help their students take an active role in their own comprehension. Community School District #24 in Queens, New York uses a nine step plan to teach comprehension using semantic mapping as a strategy. Semantic mapping also known as webbing networking, or clustering idea mapping, is a strategy that shows students how ideas and information is related and organized in a certain text.

The Nine Step Plan. The following nine step sequence shows how semantic mapping can be used to achieve stronger comprehension.

1. Which map? Text is often organized in three general ways: sequentially, descriptively and to categorize information.

- In sequential and narrative writing the organizational factor is the unfolding of sequential events.
- In descriptive writing the writer visualizes components of a central topic and uses sentences and paragraphs to tell about the topic.
- When categorizing a topic the writer organizes information in a systematic layering of ideas. Usually, the organizational plan moves from top level to lower level ideas.

2. Planning the reading. Motivational and readiness activities are done. Predictive questions are asked regarding top level ideas New vocabulary used in the reading are used in the map figures. Some vocabulary words are presented before reading and others after reading. Questions that require students to think about how the text is organized can also be used.

3. Dealing with the entire text. It is important that students have the opportunity to deal with the whole text, either by reading it themselves or by having it read to them.

4. Modeling the map construction. The teacher should initially model each map representative on the blackboard or with a overhead projector. The map can be drawn before or just after reading.

5. Retelling and summarizing. Once the map is filled in the students retell the story in their own words.

6. Report writing. With the completed map in full view students are asked to write about the story they just read. The first attempts of children who have not been involved with the writing process may contain a lot of direct copying.

7. *Modeling by student writers.* Students read their own versions to the rest of the class.

8. Peer interaction groups. The teacher can group students at two key places , after one or several map plans have been modeled as a whole class activity; or during the written reconstruction stage.

9. Integrating computers. Word processing which allows students to easily revise first drafts ideas is a key tool to help students with the writing process.

This nine step strategy particularly assists lazy or non involved readers to deep process information (Sinatra, Pizzo, 1992).

Horton, Lovitt, and Bergerud (1990) conducted a study that investigated the effectiveness of graphic organizers for three classifications of secondary students enrolled in content area classes: students with learning disabilities, remedial students, and students in regular education. The study was composed of three experiments, the first investigated a teacher directed

graphic organizer, the second examined a student directed graphic organizer with text references, and the third involving a student directed graphic organizer with a list of clues. The results of three separate experiments indicated that graphic organizers, whether teacher directed, student directed with text reference, or student directed with clues, produced significantly higher performance than self study for each group of students.

In 1984 Reutzel introduced an instructional variation on story maps for use as a post reading strategy. This strategy instead of being derived entirely from traditional notions of plot structure emphasizing the template of story grammar categories suggested by Beck and McKeowan (1981) Ruetzel's story map was based as well on text structure and used a format similar to structured overviews. Davis (1994) investigated the literal and inferential comprehension effects of the Reutzel story map when used for teacher directed pre reading instruction, at third and fifth grader levels. Two teacher directed pre reading instructional procedures were used, directed reading activity (DRA) and Reutzel's story grammar/structured overview (story mapping). The story map pre reading procedure resulted in better literal and inferential comprehension among third grader students than did the DRA pre reading procedure. There was no clearly meaningful difference in comprehension between pre reading procedures at the fifth grade level. These results, as indicated by the author, Zephaniah T. Davis (1994) merits more investigation into the use of graphic organizers to enhance reading comprehension.

Instruction in most special education classrooms typically conveys information through texts, films lectures, and discussions. Learning disabled

students seem to consistently have trouble with comprehension during content teaching. Darch, and, Evans (1982) conducted a study to examine the relative effectiveness of visual spatial displays or (graphic organizers) to enhance comprehension of important information during instruction with adolescent learning disabled students. Their study was designed to replicate and extend the findings of earlier studies.

Subjects were randomly assigned to one of two treatment groups. One group was taught by presenting key concepts with a graphic organizer to display the information. The other group was taught the same information except that content was presented by texts. Both treatment groups studied in a group task structure. Six experimenter made tests were developed for this study. Five tests directly measured student mastery of the content taught, where the other test used a transfer measure. The results of this study are as follows: (a) the use of graphic organizers was a more effective teaching strategy for learning disabled students than the text approach when a short term memory was evaluated (b) the students in the graphic organizer group remembered more key concepts than did the text group as measured by the post test and (c) neither instructional group performed well on either the transfer measure or the maintenance test. Darch and Evans (1982) felt that future research was needed with learning disabled students in the area of comprehension to help better identify specific teaching approaches which would help these students both to maintain previously taught information and to transfer comprehension skills to new content areas.

Graphic organizers might be called engagement activities. The purpose of engagement activities is to get students immersed, engrossed, and totally

involved in literature (Morgan, Bewell, and Vogt, 1991). Some engagement activities are:

Story Frame	Plot Relationships Chart
Story Map	Prediction Chart
Knowledge Chart	Story Summary
Story Chart	Character Map
Story Pyramid	Venn Diagram

The teacher makes the decision regarding which activities are best suited to a particular selection, thus tailoring the activities to the text. For maximum learning to occur the teacher must teach students how to do the activities assigned. The teacher walks the students through the activity (modeling) the manner in which the activity is developed, completed, and used.

Engagement activities may be used as an end in themselves or, better yet , as a means to an end. Just completing the assigned engagement activities will enable students to achieve full comprehension of the story. However, when the responses generated in the various activities are used as a springboard for discussion or writing, comprehension truly flourishes (Mocon, Bewell, and Vogt, (1991).

References

Bond, Charles W. (1989). Using Semantic Webbing to Develop Outlining Skills. *Reading Improvement.* 26(3), 194-198.

Burns, Roe and Ross, Elinor P. (1992). *Teaching Reading in Today's Elementary Schools.* Boston: Houghton Mifflin Company.

Cassidy, Jack and Hossler, Ann. (1992). Help Your Students Get the Main Idea - With Graphic Organizers. *Learning.* 75-82.

Darch, Craig and Eaves, Ronald C. (1982). Visual Displays to Increase Comprehension of High School Learning Disabled Students. *The Journal of Special Education.* 20(3), 309-318.

Davis, Zephaniah T. (1994). Effects of Prereading Story Mapping on Elementary Readers' Comprehension. *Journal of Education Research.* 87(6), 353-360.

Dunston, Pamela J. (1992). A Critique of Graphic Organizer Research. *Reading, Research, and Instruction.* 31(2), 57-65.

Horton, Steven V. and Lovitt, Thomas C. (1989). Construction and Implementation of Graphic Organizers for Academically Handicapped and Regular Secondary Students. *Academic Therapy.* 24(5), 625-641.

Horton, Lovitt, and Bergerud, Donna. (1990). The Effectiveness of Graphic Organizers for Three Classifications of Secondary Students in Content Area Classes. *The Journal of Learning Disabilities. 23(1), 12-29.*

Lehman, Helane G. (1992). Graphic Organizers Benefit Slow Learners. *The Clearing House.* 66(1), 53-55.

Macon, James; Bewell, Diane; and Vogt, Maty Ellen. (1991). *Responses to Literature: Grades K-8.* Newark, Delaware: International Reading Association.

Maria, Katherine. (1990) *Reading Comprehension Instruction: Issues and Strategies*. Parkton, Maryland: York Press.

Reif, Sandra. (1993). *How to Reach and Teach ADD/ADHD Children: Practical Techniques, Strategies, and Interventions for Helping Children with Attention Problems and Hyperactivity*. West Nyack, New York: The Center for Applied Research in Education.

Routman, Regie. (1991). *Invitations: Changing as Teachers and Learners K-12*. Portsmouth, New Hampshire: Reed Publishing.

Schewel, Rosel. (1989). Semantic Mapping: A Study Skills Strategy. *Academic Therapy*. 24(4), 439-447.

Sinatra, Richard and Pizzo, Jeanne. (1992). Mapping the Road to Reading Comprehension: A nine-step plan that will strengthen your students understanding of the texts they read. *Teaching K-8*. 23(2). 102-105.

Vail, Priscilla. (1992). *Learning Styles*. Rosemont, New Jersey: Modern Learning Press.

Weaver, Constance. (1988). *Reading Process and Practice: from socio-psycholinguistics to whole language*. Portsmouth, New Hampshire: Heineman Educational Books.

Appendix A
Sample Tests

Name
Date

Shiloh
by Phyllis Reynolds Naylor

Vocabulary

Match each vocabulary word with its definition.

1. cringe	a. follow closely at a person's heel
2. grovel	b. a sense that something is wrong
3. generosity	c. excitement or eagerness
4. decency	d. crouch or stoop low
5. blackmail	e. willingness to give to or help others
6. omission	f. laws or rules
7. regulations	g. run fast
8. suspicion	h. rightness, honesty
9. enthusiasm	i. threaten to expose
10. barrel	j. something left out

Use each vocabulary word in a complete, well written sentence.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Answer each question completely. If you need more space, use the back of your paper or another piece of paper. *Remember*, complete well written sentences! *Please take your time!*

1. How do Marty and Shiloh first meet?

2. Why does Marty decide to secretly keep Shiloh?

3. How does Marty feel about the lies he must tell to keep Shiloh's whereabouts a secret?

4. Why doesn't Marty report Judd's abuse of animals to the authorities?

5. Where is Marty going and what is he going to do when he spots Judd shooting a deer out of season?

6. How is Marty's life different from yours? How is it the same?

7. Was Marty's lying to protect Shiloh right or wrong? Why? What would you have done?

8. Does the fact that Judd Travers had a father who beat him and gave him a bad childhood have anything to do with his cheating people and being cruel to animals as an adult? Explain.

9. Is Judd a bad person? Tell why you think he is or is not.

10. Did you ever help a person or an animal when they needed it? How did it make you feel?

Name
Date

Stone Fox
by John Reynolds Gardiner

Vocabulary

Match each vocabulary word with it's definition.

1. scarecrow	a. Move nearer or be close to
2. harmonica	b point something out.
3. examination	c figure for scaring birds.
4. purchases	d wonderful.
5. city slickers	e huge.
6. approached	f no effort.
7 magnificent.	g small wind instrument.
8 massive.	h sophisticated city dwellers.
9. indicated	i. obtain in exchange for money
10 effortless.	j inspect closely.

Use each vocabulary word in a complete sentence.

1.

2.

3.

4.

5.

6.

7.

8.

9.

10.

Answer each question completely. If you need more space, use the back of your paper or another piece of paper. *Remember*, complete well written sentences! *Please take your time!*

1.How did Searchlight get her name?

2.Why does Searchlight take the harmonica from Willy?

3. Why does Willy have to use Searchlight to plow the fields?

4. Who is Clifford Snyder and why does he come to the farm?

5. What does everyone advise Willy to do about the back taxes?

6. What does Stone Fox use the money for that he wins in races?

7. Why do you think Stone Fox stops the other racers and lets Willy win?

8. How does Searchlight finally get over the finish line?

9. Stone Fox does not talk to white people because they have treated his people so badly. Is this the right thing to do?

10 . Is it worth the death of Willy's dog to save the farm?

Appendix B

Sample Graphic Organizers

Story Frame

The story takes place _____

_____.

_____ is a character in the story

who _____.

_____ is another character in the

story who _____.

A problem occurs when _____

_____.

After that, _____

_____

and _____.

The problem is solved when _____

_____.

The story ends with _____

_____.

The teacher may wish to make the Story Frame simpler by providing space for only one character and fewer major events in the story. On the other hand, the teacher may desire to make the outline more complicated by adding more spaces for additional characters and events. Also, the teacher may want to vary the space provided for the various entries. He or she no doubt will want to tailor the Story Frame to fit a specific title, thereby providing a more prescriptive outline, once he or she becomes more familiar with the activity.

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Story Pyramid

1. _____

2. _____ _____

3. _____ _____ _____

4. _____ _____ _____ _____

5. _____ _____ _____ _____ _____

6. _____ _____ _____ _____ _____ _____

7. _____ _____ _____ _____ _____ _____ _____

8. _____ _____ _____ _____ _____ _____ _____ _____

1. Name of main character
2. Two words describing main character
3. Three words describing setting
4. Four words stating problem
5. Five words describing one event
6. Six words describing second event
7. Seven words describing third event
8. Eight words stating solution

_____
Student

_____
Name of Book

_____
Author

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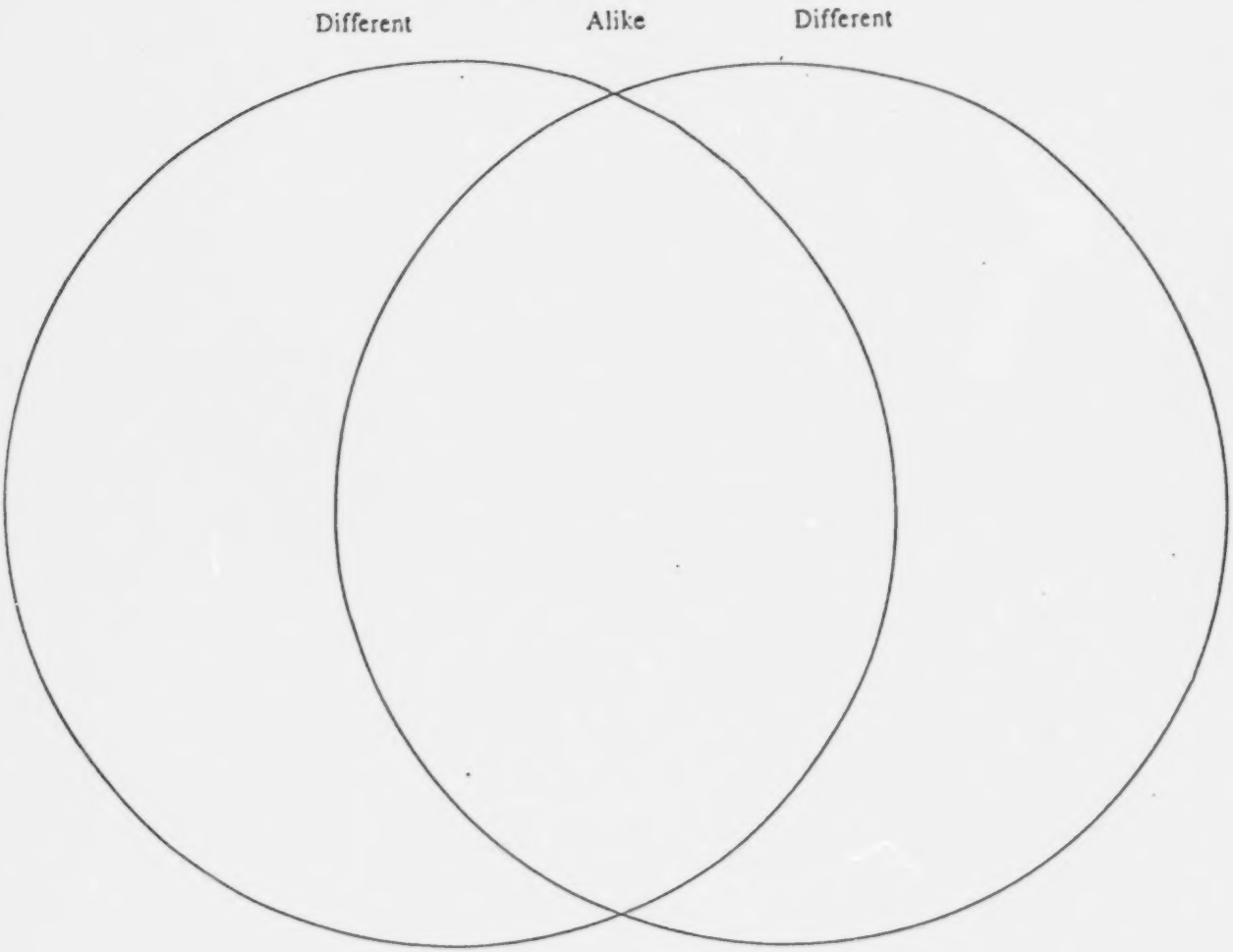
Compare/Contrast Chart



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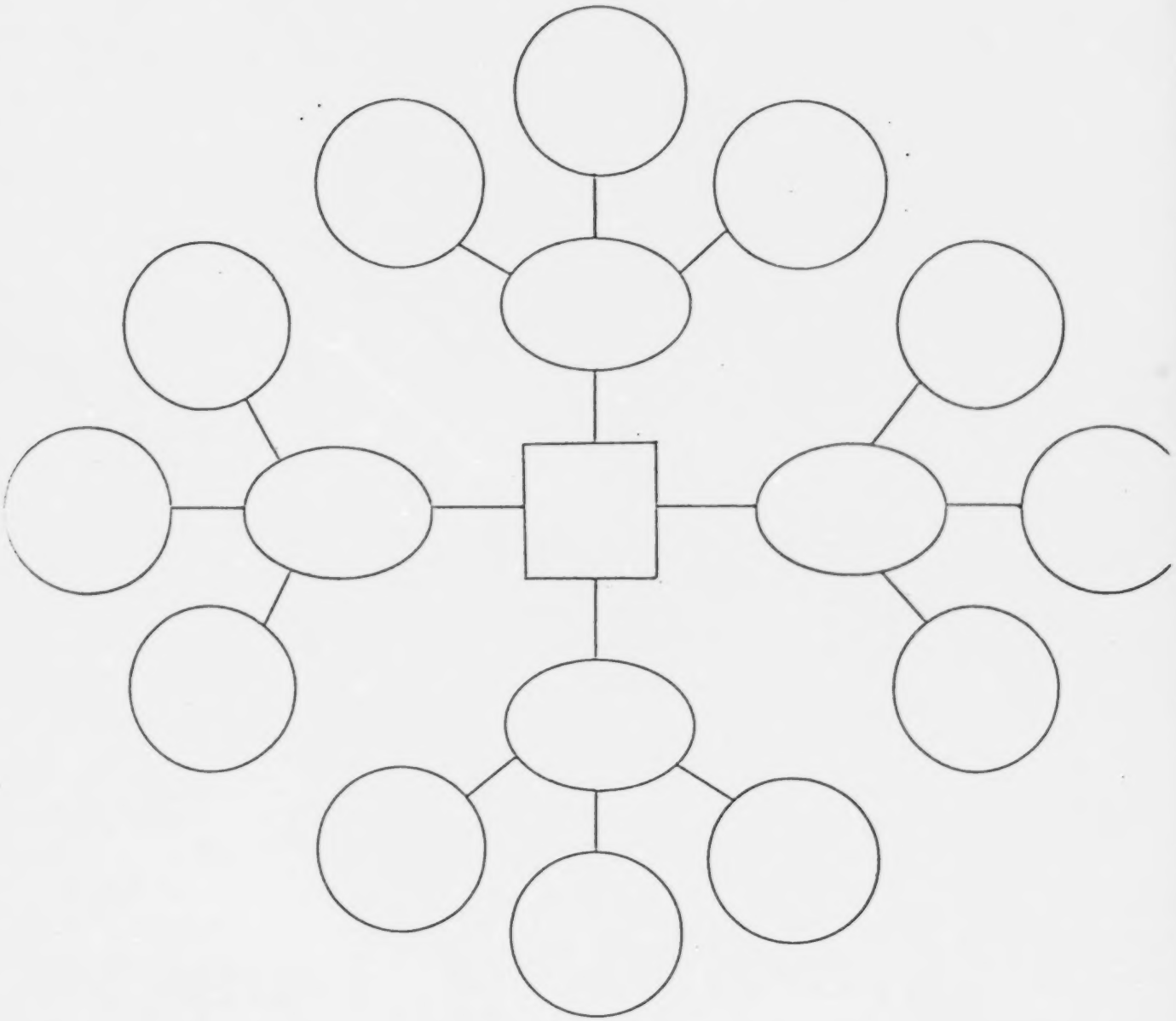
Character Map



Story Chart

Story Summary

Chapter 1
Chapter 2
Chapter 3
Chapter 4
Chapter 5
Chapter 6

Knowledge Chart

Prior knowledge about _____	New knowledge about _____
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.
7.	7.
etc.	etc.

Prediction Chart

	What I predict will happen	What actually happened
Chapter 1		
Chapter 2		
Chapter 3		
Chapter 4		
Chapter 5		
Chapter 6		

Story Map

The setting/main characters

Statement of the problem

Event 1

Event 2

Event 3

Event 4

Event 5

Event 6

Event 7

Statement of the solution

Story theme (What is this story *really* about?)

Values brought out in the story

Plot Relationships Chart

Somebody	Wanted	But	So